Cable Beach, Rye

BEACH WATER QUALITY REPORT
SUMMER 2004

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Healthy Swimming Through Clean Water

NHDES

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

BACKGROUND

The New Hampshire Department of Environmental Services (NHDES) has operated its Public Beach Inspection Program, or Beach Program, for over twenty years. Coastal beach monitoring began in 1989 and has continued through the present. NHDES recognizes the threat to public health at public beaches and continues to monitor public beaches throughout the state for the presence of pathogenic organisms. Coastal beaches are monitored for the presence of the fecal bacteria Enterococci. These fecal bacteria are present in the intestines of warm-blooded animals including humans. Fecal bacteria, when present in high concentrations and ingested, can commonly cause gastrointestinal illnesses such as nausea, vomiting and diarrhea. They are also known as indicator organisms, meaning their presence in water may indicate the presence of other potentially pathogenic organisms.

In October of 2000, the United States Environmental Protection Agency (EPA) signed into law the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The BEACH Act is an amendment to the Clean Water Act that authorizes the EPA to award grants to eligible states. The purpose of the BEACH Act is to reduce the risk of disease to users of the nation's recreational waters. BEACH Act grants provide support for development and implementation of monitoring and notification programs that help protect the public from exposure to pathogenic microorganisms in coastal recreation waters.

NHDES received grant funding in 2002 to develop and implement a beach monitoring and notification program consistent with EPA's performance criteria requirements published in the *National Beach Guidance and Required Performance Criteria for Grants* document (www.epa.gov/waterscience/beaches/grants). NHDES has successfully met all requirements and continues to expand the monitoring and notification program. In 2002, only 9 coastal beaches were monitored, in 2003 fifteen coastal beaches and in 2004 sixteen coastal beach were monitored on a routine basis.

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Beach Description

Cable Beach is a soft sand beach with a length of 2,532 feet, or just less than ½ mile. The beach is frequently used by residents and vacationers for various recreational activities. There are 5 access points to the beach area from the neighborhood. Lifeguard and sanitary facilities are present throughout the beach season.

Waterfowl are frequently observed at the beach. The most commonly seen are gulls, although generally they are observed in small numbers. Dogs were observed on the beach in May. There are restrictions for dogs during beach hours however they may be present before and after normal beach hours.

Below is a brief description of the sampling stations at Cable Beach, Rye. The stations are pictured in Figure 1.

- For all stations, parking is available by permit on Cable Road off Route 1A or along Route 1A. Enter the beach via the main entrance at Cable Road.
- The left station is located eight houses to the north of the main beach entrance. The sample is collected in front of the eighth house.
- The center station is located three houses to the south of the main entrance. The sample is collected in front of the third house.
- The right station is normally accessed from Jenness Beach. The sample is collected in front of the residence with a large flagpole at the southern end of Cable Beach.

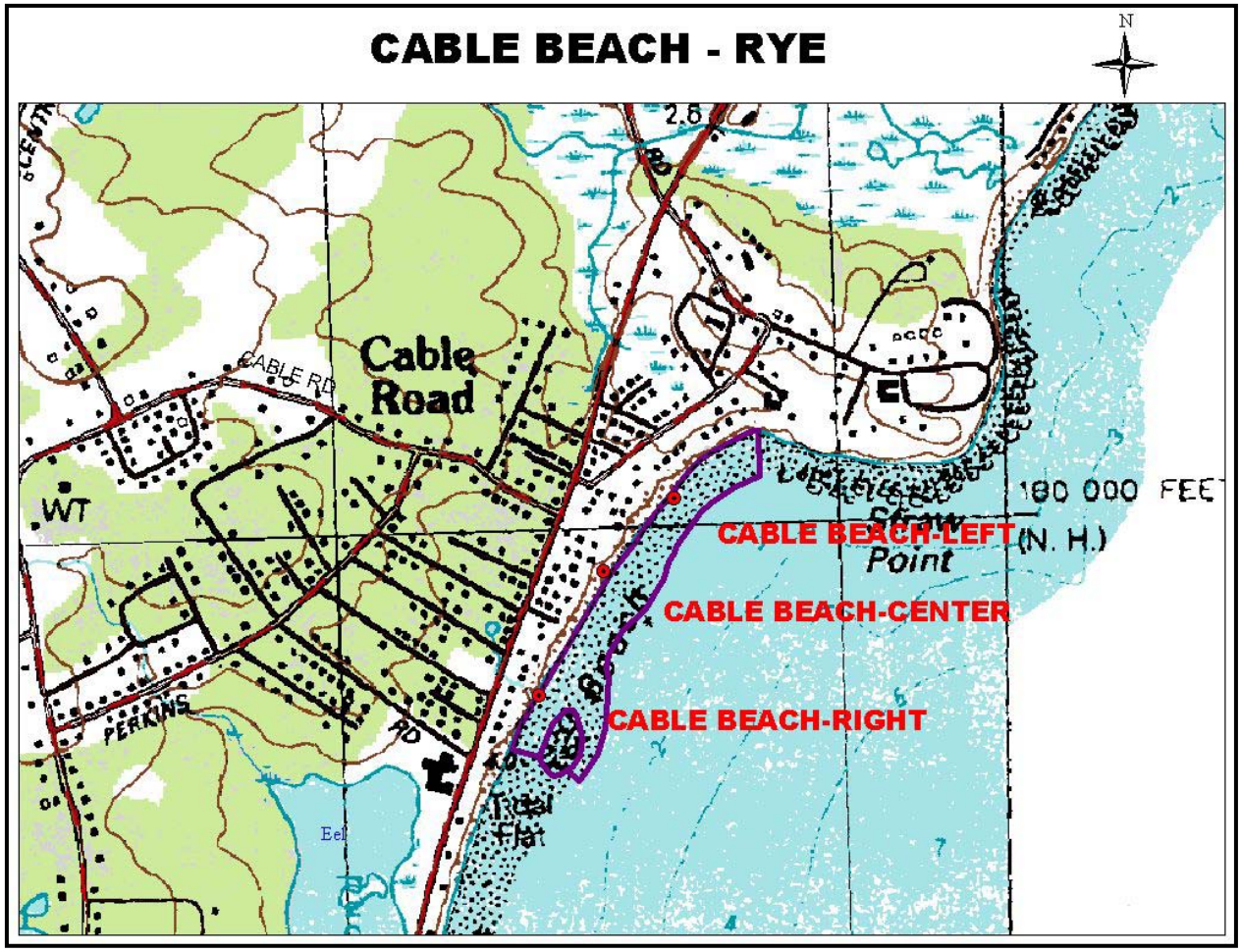

Figure 1. Map of Cable Beach

Tier Status and Sampling Frequency

The Beach Program developed a risk-based beach evaluation process and tiered monitoring approach and implemented this approach during the 2003 beach season. Beach evaluations are conducted annually to determine potential health threats to the public. Evaluations are based on several criteria in three main categories: beach history, microbial pathogen sources, and beach use. Based on these criteria, beaches are assigned either a Tier I or Tier II status. Tier I are high priority beaches that have an increased potential to affect public health while Tier II are low priority beaches that have less potential to affect public health. Beach sample frequency is based on the Tier statuses; Tier I beaches are sampled weekly and Tier II beaches are sampled every other week.

Cable Beach was categorized as a Tier I beach based on the Beach Program's Risk-Based Evaluation ranking system. This ranking indicates that the beach is frequently used by the public and there are potential pollution sources present that may negatively affect public health. The Cable Beach Tier I ranking has not changed since the ranking system was implemented.

Water Quality

Beaches are monitored to ensure compliance with State Water Quality Standards. Marine waters are analyzed for the presence of the fecal bacteria Enterococci. Enterococci are known as indicator organisms, meaning their presence may indicate the presence of pathogenic bacteria. The state standard for Enterococci at public beaches is 104 counts/100 mL in one sample, or a geometric mean of 35 counts/100 mL in three samples collected over sixty days. Standard exceedances require the issuance and posting of a beach advisory. Beach advisories remain in effect until subsequent beach sampling indicates safe water quality conditions.

The number of samples collected at each beach is determined by the beach length. Beaches less than 100 feet in length are sampled at left and right locations 1/3 of the distance from either end of the beach. Beaches greater than 100 feet in length are bracketed into thirds and sampled at left, center and right locations. Routine sample collection may be enhanced by sampling known or suspected pollution sources to the beach area. Also, storm event sampling may be conducted at beaches where wet-weather events are expected to affect beach water quality.

The 2004 sampling season began June 1st. June was cooler and drier than normal, July was cooler and wetter than normal, while August was warmer and wetter than normal. The sampling season encompassed 108 days, of which precipitation was recorded on 42 days (based on Seabrook WWTF recorded precipitation). Twenty beach days (normal beach hours are considered 9:00 a.m. to 5:00 p.m.) were directly affected by precipitation.

Cable Beach was sampled once per week from mid-May through Labor Day. Three samples were collected at left, center and right stations (Figure 1). There were a total of 15 routine inspections performed and 45 samples collected in 2004. Two re-inspections were performed after bacteria levels exceeded state standards.

Table 1 includes Enterococci data from each sampling event in 2004. Overall, the Enterococci levels were relatively low. On two occasions Enterococci levels exceeded the state standard. On June 22, 2004, the left sample was elevated and the center sample exceeded the state standard. Subsequent samples indicated the bacteria levels had returned to normal. There is no direct evidence as to what may have caused the elevated Enterococci levels. No bathers or waterfowl were present at the time of sampling and rainfall does not appear to be a factor. One possible explanation is that the northern end of Cable Beach is guarded by Locke's Neck. This land mass may reduce flushing from the open ocean waters allowing bacteria to linger along the left and center of the beach.

Enterococci levels were elevated again in the left sample on August 2, 2004. Beach inspection data indicate that there was a large amount of seaweed at the left station. Seaweed can harbor bacteria and when disturbed the bacteria may be released into the water column. This was the most likely cause of elevated Enterococci levels in August.

Table 1. Cable Beach Enterococci Data 2004

Sample Date	Station Name	Results (counts per 100 mL)
05/17/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<10
06/02/2004	Cable Beach – Left	10
	Cable Beach – Center	5
	Cable Beach – Right	20
06/08/2004	Cable Beach – Left	10
	Cable Beach – Center	<10
	Cable Beach – Right	10
06/16/2004	Cable Beach – Left	<5
	Cable Beach – Center	60
	Cable Beach – Right	60
06/22/2004	Cable Beach – Left	100
	Cable Beach – Center	140
	Cable Beach – Right	10
06/24/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	5
06/29/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<5
07/06/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<5
07/12/2004	Cable Beach – Left	10
	Cable Beach – Center	<5
	Cable Beach – Right	<10
07/20/2004	Cable Beach – Left	<5
	Cable Beach – Center	<10
	Cable Beach – Right	<10
07/27/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<5
08/02/2004	Cable Beach – Left	170
	Cable Beach – Center	10
	Cable Beach – Right	<10
08/04/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<10
08/10/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<10
08/16/2004	Cable Beach – Left	<5
	Cable Beach – Center	<10
	Cable Beach – Right	<10
08/23/2004	Cable Beach – Left	<10
	Cable Beach – Center	<10
	Cable Beach – Right	<5
08/31/2004	Cable Beach – Left	10
	Cable Beach – Center	<5
	Cable Beach – Right	10

Figure 2 depicts the Enterococci data in relation to the state standard for coastal beaches.

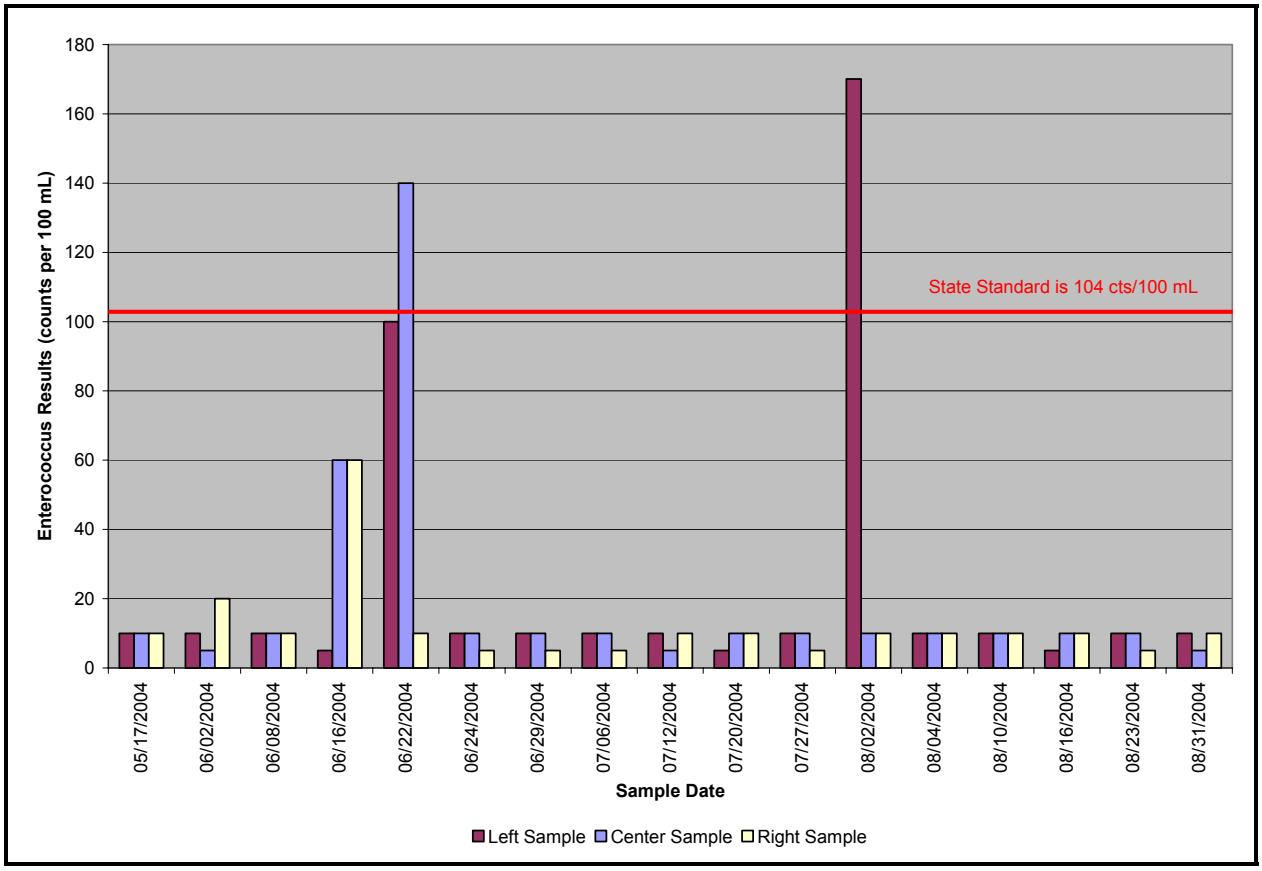

Figure 2. Cable Beach Enterococci Data 2004

The Beach Program staff analyzed whether a relationship exists between elevated Enterococci levels and precipitation at Cable Beach. Analyses of the data indicate no direct correlation. DES will continue to monitor precipitation data and Enterococci levels. Precipitation often causes elevated bacteria levels due to runoff in the watershed.

Areas of Concern

There are no obvious areas of concern at Cable Beach. The surrounding area is residential and the beach is popular with residents and vacationers. The public is often observed walking their dogs on Cable Beach. As long as they clean up their dogs' wastes, there should be no concern. Pet wastes create the potential to increase bacteria concentrations in the swimming area. Also, young children might touch the feces when playing in the sand causing a potential health risk. The Town is pro-active and has installed signs and plastic bags so dog walkers know to remove pet wastes.

Thoughts for the Future

- The Town of Rye, local businesses, or school groups should consider joining NHDES' Adopt-a-Beach Program. The program would consist of beach clean-ups and water quality monitoring. DES would conduct training sessions and participate in education and outreach activities for the community. If you are interested, please contact Sara Sumner at 603-271-8803 or ssumner@des.state.nh.us.

- The Beach Program applauds the Town for providing trash receptacles for the public to dispose of waste. The Beach Program has received complaints in the past about the lack of trash receptacles at the beach. Trash receptacles will help reduce litter along the beach making the area more aesthetically pleasing to the public. It may also keep marine waterfowl off the beach reducing the amount potential fecal contamination.